

CLAIMS

1. Injection molding nozzle (1) for plastic comprising at least two outlet openings (2) in an end region thereof, directed toward different sides, for discharging to different sprue openings and with a feed channel (4) for the plastic to the outlet openings (2), wherein the outlet openings (2) directed toward different sides respectively have a needle closure with a closure needle (5) adjustable in a direction of the outlet opening (2), and a drive for displacing the closure needles (5) into a closing position.
2. Injection molding nozzle according to claim 1, wherein, the feed channel (4) comprises a separate feed channel for the plastic for each of the lateral outlet openings (2) provided with a closure needle (5), and the feed channels (4) are arranged outside a middle area of the injection molding nozzle (1).
3. Needle closure nozzle according to claim 1, wherein the feed channels (4) for the plastic enter the outlet openings (2) before mouths (6) thereof, near ends of the individual closure needles (5).
4. Injection molding nozzle according to claim 1, wherein the outlet openings (2) and the closure needles (5) displaceable into them are arranged approximately radially and generally in one plane extending perpendicularly to a longitudinal mid-axis of the injection molding nozzle (1).
5. Injection molding nozzle according to claim 1, wherein the closure needles (5) of the outlet openings (2) have a common drive for displacement into the closing position.

6. Injection molding nozzle according to claim 1, wherein the closure needles (5), in a closing direction, have a cross section enlargement (8) or a shoulder located before the feed channel (4) entry for the plastic as an action surface for injection molding pressure for opening the closure needle (5), and the drive acting in the closing direction can be disconnected and/or overcome during opening of the respective closure needle (5).
7. Injection molding nozzle according to claim 6, wherein compression springs and/or displacement means engaging mechanically on the closure needles (5) are provided for displacing the closure needles (5) into the closing position and are located at ends remote from the outlet opening.
8. Injection molding nozzle according to claim 1, wherein a common drive element is provided for displacing a plurality or all of the closure needles (5) in a closing direction, and wherein the drive element is a displacement member movable between ends of the closure needles (5) and comprises a cross section that is at least one of a cone (9), conical, tapered, a cam disk or eccentric disk (10).
9. Injection molding nozzle according to claim 8, wherein for displacing a conically shaped or cone (9) displacement member, a push/pull rod (11) displaceable in an axial direction is located centrally within the injection molding nozzle (1), or for rotating a cam disk or eccentric disk (10) a rotary rod (13) is provided centrally in the injection molding nozzle (1).
10. Injection molding nozzle according to claim 1, wherein a drive element engaging the closure needles (5) is coupled and connected with the closure needles such that one movement serves for closing and an opposite movement serves for pulling back the closure needles (5) into an opening position.

11. Injection molding nozzle according to claim 1, further comprising a housing (14) that is divided perpendicularly to the feed channels (4) for the plastic and has a thermal compensation gap (15) in a region of the division.
12. Injection molding nozzle according to claim 11, wherein the thermal compensation gap (15) on the housing (14) of the injection molding nozzle is sealed by an overlap at least in a region of the feed channels (4) for the plastic.
13. Injection molding nozzle according to claim 12, wherein the overlap serving for sealing the thermal compensation gap (15) in the region of the feed channels (4) is formed by a sliding sleeves (16) or a respective sliding sleeve (16) arranged on an inside or outside of the feed channel (4).
14. Injection molding nozzle according to claim 1, wherein a rod (11, 13) arranged in a center of the nozzle housing (14) for a common drive of the closure needles (5) is provided or coupled with a rotary or axial drive.
15. Injection molding nozzle according to claim 1, wherein the outlet openings (2) and the closure needles (5) displaceable therein are arranged in bushings inserted into a housing (14) of the injection molding nozzle (1).
16. Injection molding nozzle according to claim 1, wherein the closure needles (5) can respectively be axially introduced from outside into a mounting position and fixed by a retaining cap (18) which can be screwed to an outside of the injection molding nozzle and includes a mouth (6) of the outlet opening (2).
17. Injection molding nozzle according to claim 1, wherein the closure needles (5) can be pushed in from an inner side into a bushing (17) receiving them before

insertion into the nozzle body and fixed in an axial direction by a shoulder or a cross section enlargement, such that displacement movement is limited to a closing direction and the closure needle (5) is delimited in the radial direction.

18. Injection molding nozzle according to claim 1, wherein more than two outlet openings with closure needles (5) displaceable therein are arranged on one nozzle housing (14), and are movable in the closing direction with the same drive element.